



1. What is the difference between the state graph and the search tree?
2. For the given start state shown in the figure, draw three levels of the search tree and a portion of the state graph .

1	2	3
5	*	4
7	6	8

- 2.1. Is the search tree infinite or not? Explain why?
 - 2.2. Is the state graph finite or not? Explain why?
 - 2.3. For both the state graph and the search tree, which of them can contain redundant states?
 - 2.4. When would the search tree be finite/infinite?
3. Write a computer program that takes a start state and return the minimum set of sequence of actions (Left ,Right ,Up ,Down) and determine.
 - 3.1. Should you use DFS or BFS to find the optimal solution?
 - 3.2. Can DFS find a solution? And in case it found a solution, Is it the optimum solution?
 - 3.3. For the start state,
 - 3.3.1. How many elements are in the DFS tree when you find the goal? And why is it so big?
 - 3.3.2. How many steps the agent should take to reach the goal?
 - 3.3.3. How could you decrease the number of elements in the search tree of BFS?
 - 3.3.4. How could you build a great reflex agent for this game?

Best wishes
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